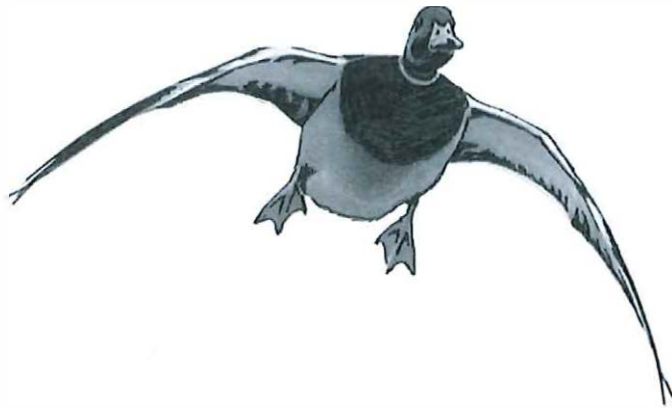




Muskegon State Game Area

Master Plan



MICHIGAN DEPARTMENT OF NATURAL RESOURCES

WILDLIFE DIVISION
NIK KALEJS
02/18/16

Intended Purpose and General Management Direction

Recognizing the unique semi-wilderness state of the lower Muskegon River delta and surrounding bluffs, the importance of the wetland habitat, and potential for waterfowl management, the Natural Resources Commission dedicated the Muskegon State Game Area (MSGA) on January 13, 1950. Since then, the MSGA has been managed for waterfowl as well as forest wildlife species including white-tailed deer and squirrels. Wetland impoundments, agricultural crop fields, warm and cool season grass plantings, and forest management practices (selective and clear cutting) have been the primary habitat management techniques on the game area. In addition, the wetlands along Lane's Trail have been supplemented by creation and management of ditching/pothole projects in order to improve habitat for waterfowl. The first wild turkey reestablishment releases took place at the East Unit of MSGA in 1992, and since that time, habitat management for wild turkeys has been important. Also, management for the federally endangered Karner Blue Butterfly was initiated in 2007 along power lines and forest openings at the East Unit.

The majority of land on the game area was purchased with federal Pittman-Robertson Funds, but also acquired through State Game funds, tax reversion, and recreation bond monies. The MSGA is located in the Southwest Region (SWR) of the Lower Peninsula along the Muskegon/Newaygo county border (Figure 2). Over time, the MSGA has been expanded to include 15,338 acres (Figure 3) and is managed to provide quality habitat for mallards, wood ducks, white-tailed deer, pileated woodpecker, and Karner Blue Butterfly, and for recreational opportunities associated with these species.

In the future (50-100 years from now) we expect the area to continue to contribute to sustainable populations of important wildlife species, provide valuable hunting recreation, and provide habitat for Karner Blue Butterfly.

Background

At a local level, this plan helps fulfill goals and objectives of other higher level Department and Wildlife Division plans and initiatives. The Department goals (protect natural resources, sustainable recreation, strong natural resource-based economies, and strong relationships and partnerships), the Wildlife Division's Guiding Principles and Strategies (Goal 2-Manage habitat for sustainable wildlife populations, Goal 4-Increase public participation in hunting and trapping), More Bang For Your Buck concepts (outstanding grouse, woodcock and turkey hunting, challenge of small game hunting, and great diversity of high quality waterfowl hunting), the Division's Southwest Regional Operational Plan, Southwest Region Habitat Guidance documents, and the Southwest Region Land Management Plan are all reflected in this master plan.

Wildlife Species

True to the intended purpose of the game area when it was dedicated in 1950, we will continue to focus our efforts on species and habitats that help meet our goals to provide quality hunting opportunities and our other public trust responsibilities such as following the guidance provided in the Karner Blue Butterfly Habitat Conservation Plan signed by the Department and US Fish and Wildlife Service in 2005.

Table 1. A list of species or projects to be worked on during this planning period, reflecting opportunities for habitat or recreational management.

Common Name	Featured Species	T&E, SC Species	Climate Change Vulnerable	Remarks
Karner Blue Butterfly	X	X	X	<i>Openings and oak-pine barren restoration and maintenance</i>
Pileated Woodpecker	X			<i>Maintain mature timber stands, corridors along streams, and snag trees</i>
Ruffed Grouse	X		X	<i>Young forests, aspen</i>
White-tailed Deer				<i>Openings, food plots, mast trees</i>
Wild Turkey	X			<i>Openings, food plots, oak-pine barren restoration and maintenance</i>
Mallard	X			<i>Small impoundments, grassland plantings for nesting cover, and diversify cattail monocultures</i>
Wood Duck	X			<i>Wooded floodings, nest box maintenance</i>

Ruffed grouse and aspen are both predicted to be climate change vulnerable which may impact our ability to effectively meet our desired future conditions outlined in Goal 5 (see below). We will monitor aspen regeneration as part of routine forest inventory and consider alternatives to aspen, as necessary. In general, younger forests are better able to withstand climate shocks and lowering the average age of forested area is likely a good adaptation strategy.

Karner Blue Butterflies are also predicted to be “climate change vulnerable” which may impact our ability to effectively meet conditions outlined in Goal 3 (see below) as climate change is predicted to play a role in the life cycle of this species.

Existing Conditions

The MSGA is large enough (15,338 acres) to provide many diverse cover types for wildlife. The **Main** or **West Unit** lies mostly in the Muskegon River delta and floodplain. Most of this unit is forested with extensive tracts of lowland timber, including significant portions of mature or old-growth floodplain forest. Other zones of the floodplain are dominated by open marsh. The floodplain in the eastern half of the West Unit is bordered by 60 to 80 foot forested bluffs. The **East Unit** of the MSGA transitions from the Muskegon River floodplain and consists of an upland mixture of oak and aspen types, wet-mesic sand prairie remnants, oak-pine barren remnants, and lowland deciduous tree species. Both areas include a grassland or agricultural component, and Mosquito Creek is a major tributary for both units.

The two units of the area and the different cover types available provide the opportunity to manage for more than one set of goals and objectives (Figure 1). While both the West and East Units include goals to provide quality habitat for wild turkey, ruffed grouse, white-tailed deer, and small game, the West Unit is the largest of the areas and has an emphasis on waterfowl habitat and management. The East Unit has significant remnants of oak-pine barren types, and management potential to restore, expand, and maintain this rare cover type. In this unit, management goals are also aimed at maintenance and expansion of Karner Blue Butterfly habitat and populations (Figure 4).

The Phragmites and other wetland invasive species have not yet become well established at the MSGA, but remain a major concern. Monitoring for and treating new infestations will remain an important part of habitat management on this area.

Table 1. Current cover types on the Muskegon SGA based on MiFi surveys From 2012.

Cover type	Acres	Percent of Game Area
Lowland Deciduous Forest	5,510	35.9
Oak	2,903	18.9
Marsh	1,499	9.8
Lowland Shrub	1,303	8.5
Aspen	816	5.3
Low-Density Trees	773	5.0
Mixed Upland Deciduous	588	3.8
Herbaceous Openland	445	2.9
Cropland	353	2.3
Water	352	2.3
Lowland Aspen/Balsam	208	1.4
Northern Hardwood	188	1.2
Lowland Mixed Forest	118	0.8
Red Pine	65	0.4
Upland Shrub	57	0.4

Other Cover Types	160	1.1
Total	15,338	

Table 2. Current Natural Communities and Desired Future Condition on the Muskegon SGA

<i>Natural Community</i>	<i>Number in SGA</i>	<i>Number Known in State</i>	<i>Number Known in Region</i>	<i>Rarity</i>	<i>Desired Future Condition</i>
Oak-Pine Barrens	3	27	13	S2	Improve/ Expand
Wet-Mesic Sand prairie	1	10	8	S2	Improve/ Maintain
Hardwood-Conifer Swamp	1	48	19	S3	Improve/ Maintain

Recreational Use

The MSGA provides a host of recreational opportunities for local residents and visitors alike, including hunting, trapping, fishing, bird watching and wildlife viewing. The West Unit includes several key access points to the Muskegon River. The MDNR Wildlife Division maintains two small boat access sites. The Holton-Duck Lake Road site is on the north bank of the river (east end of the unit) and the Sheridan Road site is on the south bank (west end). Two county road access points are also used by the public, Mill Iron Road on the south side and Creston Road west of US-31 (Figure 3). The East Unit also includes an open snowmobile trail that is part of the West Michigan snowmobile trail system. The Department will continue to monitor any existing commercial and recreational uses for interference with the intended purposes of the area as described in this plan.

Impacts on the Local Economy

Contributions to the local economy resulting from activities on the game area include sharecropping 220 acres through an agreement with a local farmer. Regular timber management activities and contracts with local loggers also have a significant impact on Michigan's economy. An estimated hunter use days per year provide a direct boost to local restaurants, sporting goods stores and convenience stores and gas stations. Approximately 700 additional annual hunter trips are generated by hunters attending the Muskegon Wastewater Managed Waterfowl Hunt on the nearby Muskegon Wastewater System.

Management Direction

The desired future condition for the SGA for the Muskegon State Game Area is outlined in the following table.

Table 3. Desired Future Condition of Cover Types and Habitat Issue Direction on the Muskegon SGA

<i>Cover type and Habitat Issues</i>	<i>Desired Future Condition</i>
Oak	Maintain
Northern Hardwoods	Maintain
Mixed Upland Deciduous	Decrease
Herbaceous Open land	Maintain
Natural Pines	Maintain
Planted Pines	Decrease
Mixed Upland Conifers	Maintain
Lowland Deciduous Forest	Maintain
Lowland Coniferous Forest	Maintain
Lowland Mixed Forest	Maintain
Lowland Shrub	Maintain
Emergent Wetland	Increase
Acres of Agriculture	Maintain
Acres of Aspen	Increase
Riparian Corridor	Maintain
Managed Wetlands	Increase

Goals, Objectives, and Management Actions

What follows is the strategic direction for the Muskegon SGA, to be implemented during this planning cycle. This plan describes the **goals** or desired future condition for the area, the **objectives** under each goal, and the **actions** associated with each objective. Goals come mostly from the featured species, key game species, and habitat issues relevant to MSGA.

Goal I: sustainable populations of wood ducks on the Muskegon SGA, especially the West (Main) Unit.

Rationale: wood ducks are highly desirable game species and protecting and maintaining their preferred habitat will provide waterfowl hunting opportunities. In addition, the forested riparian corridors along the Muskegon River, Cedar Creek, Mosquito Creek, and Spring Creek protect water quality and maintain habitat for a variety of wildlife species.

Metrics: staff observation and hunter surveys; assessment of lowland forest types within IFMAP.

Objective A. Maintain the current extent (~ 6931 acres) of lowland forest and shrub cover on the SGA.

Action 1. Do not implement timber management activities in lowland forest and shrub stands adjacent to the Muskegon River, Cedar Creek, Mosquito Creek, and Spring Creek.

Action 2. Restrict timber management in upland stands within 150 ft. of these stream corridors.

Objective B. Manage emergent wetlands in the Mosquito/Spring Creek and Cedar Creek areas to provide wetland vegetation and open water areas for wood duck habitat.

Action1. Use water level manipulation (where available), prescribed burns, herbicide treatments, and mechanical push-outs to manage wetland vegetation and increase plant diversity.

Action 2. Monitor (and treat as necessary) emergent wetlands for the presence of invasive plant species, including, Phragmites and purple loosestrife.

Goal II: sustainable populations of mallards on the Muskegon SGA West (Main) Unit.

Rationale: mallards are highly desirable game species and protecting and improving their wetland habitats will provide waterfowl hunting opportunities. These wetland areas also protect water quality and provide habitat for a large variety of wildlife species.

Metrics: staff observation and hunter surveys; assessment of wetland types within IFMAP.

Objective A. Maintain, improve, and increase the current extent (~1,499 acres) of emergent wetland types on the SGA.

Action 1. Use water level manipulation (where available), prescribed burns, herbicide treatments, and mechanical push-outs to manage wetland vegetation and increase plant diversity.

Action 2. Monitor (and treat as necessary) emergent wetlands for the presence of invasive plant species, including Phragmites and purple loosestrife.

Objective B. Provide additional mallard nesting sites on the MSGA.

Action 1. Establish 15 acres of additional grassland nesting habitat around natural wetlands and artificial mitigation ponds on the MSGA in the next 5 years.

Action 2. Provide additional artificial nesting platforms to supplement nesting opportunities. Partner with local MDHA chapters and other conservation organizations to place and maintain (yearly) these structures.

Goal III: sustainable populations of Karner Blue Butterfly (KBB) at the East Unit of Muskegon SGA.

Rationale: Once found from Minnesota to New England and into Canada, habitat loss and vanishing populations of butterflies have resulted in the Federal government listing the KBB as an endangered species. Oak-barren cover types at the East Unit may provide additional habitat for the KBB.

Metrics: KBB presence or absence and abundance by means of surveys.

Objective A: Maintain, enhance, and restore open oak habitat (a matrix of oak-pine barrens, wet-mesic sand prairie, coastal plain marsh, and deciduous forest) at the East Unit of Muskegon SGA.

Action 1. Expand potential KBB habitat in the Fitzgerald Road area of the East Unit by prescribed burns (approximately 150 acres by 2020).

Action 2. Remove non-native trees and shrubs from oak-pine barren areas by mechanical means, as needed. Connect remnant areas and utilize heavy equipment and commercial logging to reduce forest canopy, manage slash, and generate acceptable levels of soil surface disturbance through scarification.

Action 3. Enhance existing and potential habitat by selective soil preparation and seeding of forbs and grasses in oak-pine barren habitat areas.

Goal IV: sustainable populations of pileated woodpeckers on the Muskegon SGA (both Units)

Rationale: Pileated woodpeckers are uncommon birds across the general landscape and require extensive tracts of deciduous forests. Wildlife viewing is a popular activity on the Muskegon SGA. The forested riparian corridors used by the pileated woodpeckers provide habitat for a variety of wildlife species and also protect water quality

Metrics: staff observation and feedback from birders; assessment of lowland forest types within IFMAP

Objective A. Maintain the mature stands of deciduous forest types on the SGA

Action 1. Do not implement forest management activities in lowland forest stands adjacent to the Muskegon River, Cedar Creek, and Spring Creek.

Action 2. Restrict forest management activities in upland stands within 150 ft. of these stream corridors.

Objective B: Maintain an adequate amount of snag trees for feeding sites.

Action 1. Preserve snag trees in timber harvest sites, leaving an average of 1 snag tree per acre.

Goal V: Sustainable populations of ruffed grouse on both Units of the Muskegon SGA.

Rationale: Grouse are highly desirable game species and managing for their habitat benefits numerous other wildlife species on both Units of the Muskegon SGA. White-tailed deer also benefit from the Actions listed under this Goal.

Metrics: staff observations, surveys, and feedback from hunters; assessment of aspen trends through time based on forest inventory; number of suitable forest openings.

Objective A: Increase the accessible stands (approximately 700 acres) of the aspen cover type to 900 acres by 2035, and provide a balance of age classes on a 40 year rotation (25% age 0-10, 25% age 11-20, 25% age 21-30, and 25% age 31-40) to benefit grouse.

Action 1. Establish an aspen harvest regime (~ 200 acres every decade) that will expand and improve the aspen type by optimizing

age classes and the distribution of aspen stands on the Muskegon SGA.

Action 2. Provide grouse drumming logs in aspen timber harvest areas (approximately 1 per 5 acres).

Goal VI: Sustainable populations of wild turkey on the Muskegon SGA (both units)

Rationale: Wild turkeys are highly desirable game species and managing for their habitat, especially the oak component of the forest, benefits numerous other wildlife species. White-tailed deer also benefit from Actions taken under this Goal.

Metrics: staff observations and hunter surveys; assessments of oak types within IFMAP

Objective A. Maintain the current extent (~ 2200 acres) of accessible oak cover type on the MSGA and balance age class distribution.

Action 1. Develop and begin implementation of an adaptive oak management strategy by 2019.

Action 2. Harvest approximately 300 acres of oak forest during the next decade.

Objective B. Maintain or increase the oak component in non-oak stands

Action 1. When managing other forested cover types, including red pine plantations, identify opportunities for maintaining oak or converting these types to oak-dominated stands.

Figure 1. Map representing the major habitat cover type classes in the SGA.

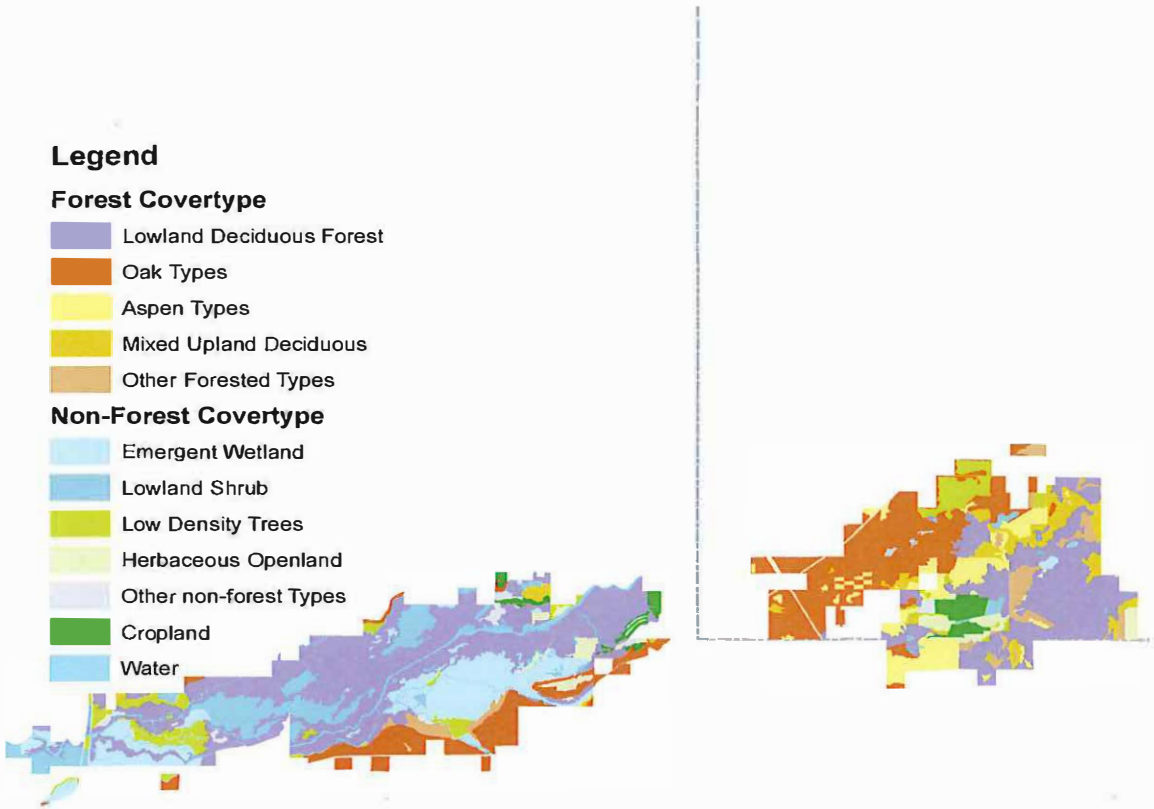


Figure 2. Location of the Muskegon SGA.



Figure 3. SGA Boundaries and Units.

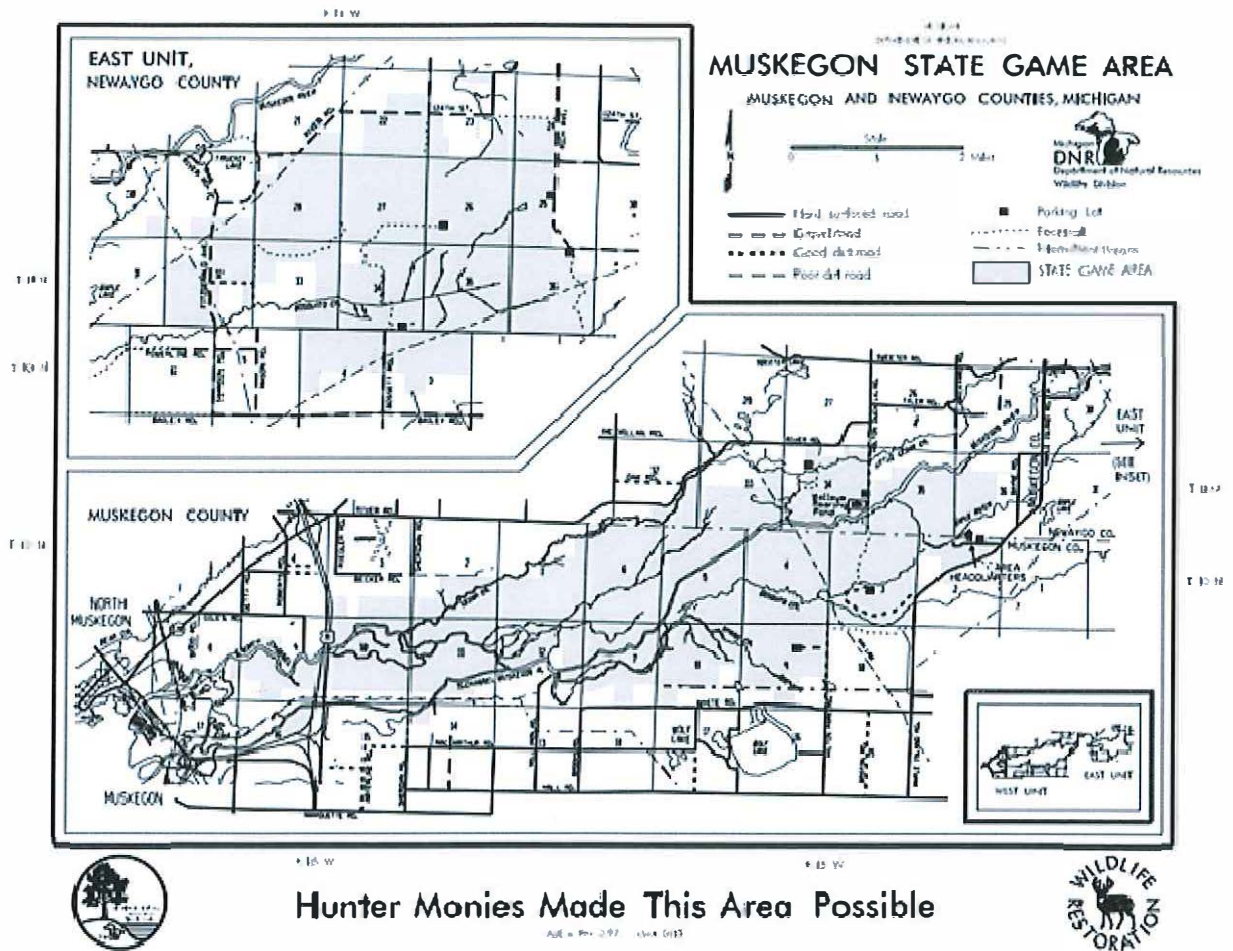
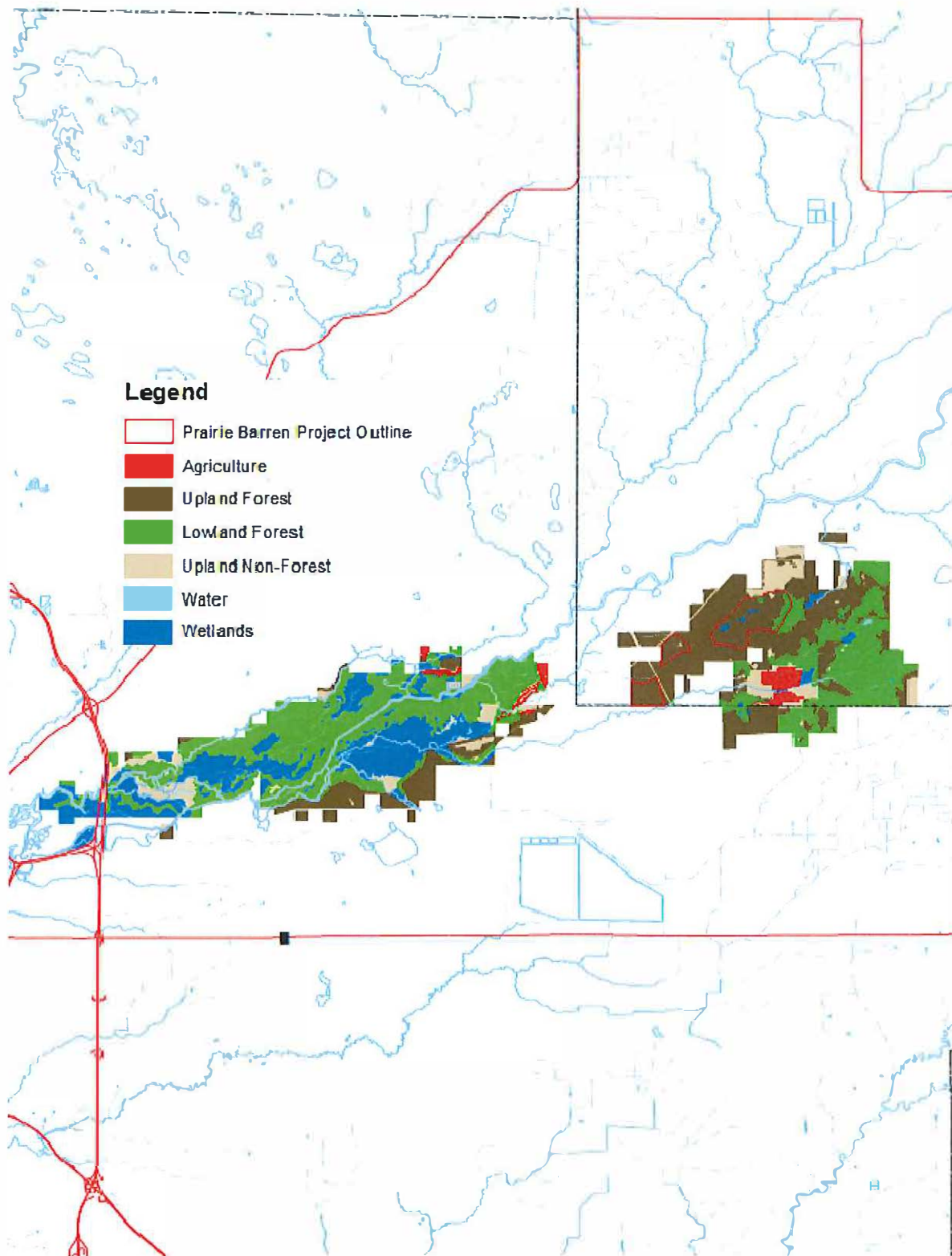


Figure 4. Muskegon SGA Management Areas.



Acquisition and Disposal of Land

This is an important game area that provides a host of recreational opportunities for local resident and visitors. Our overall goal is to continue to provide these opportunities. Since the Muskegon SGA is located in southern Michigan and within close distance of Muskegon and Grand Rapids, the land acquisition strategy for the MSGA is to both fill in state ownership by acquiring available blocks located within and among current state ownership and to expand the area by obtaining appropriate parcels that are outside the current ownership but within the acquisition boundary. Parcels will be evaluated as they become available and will be acquired on a willing seller basis only.

Review and Approval

This plan was available for public review and comment on the DNR website between January 6, 2016 and February 9, 2016. During this period, 15 comments were received and considered before finalizing this plan. The final plan was approved on February 18, 2016 and will be reviewed within 10 years of the approved date.

Approvals



(John Niewoonder), Field Operations Manager

2/26/16

Date



(John Niewoonder), Acting Regional Supervisor

2/26/16

Date